



Center for the Study of Traumatic Stress 2010 ANNUAL REPORT

IMPROVING PSYCHOLOGICAL HEALTH AND RESILIENCE



THROUGH TRAUMA RESEARCH,
EDUCATION AND CONSULTATION

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In response to the Deepwater Horizon oil spill in the Gulf of Mexico, U.S. Soldiers with the Alabama Army National Guard assemble a wall of Hesco barrier containers in July 2010.

Acknowledgements

The Center for the Study of Traumatic Stress (CSTS) would like to acknowledge and thank each of these organizations for their continued support, guidance, and leadership throughout the past year.

- Uniformed Services University of the Health Sciences
- Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury
- The Henry M. Jackson Foundation for the Advancement of Military Medicine
- The National Center for PTSD
- Deployment Health Clinical Center



We wish to acknowledge our research relationships and support from:

- U.S. Army
- Centers for Disease Control (various agencies)
- The Carter Center
- Sesame Workshop
- NCTSN
- NIMH
- Medical Research Command (MRC) at Ft. Detrick

Photos on front and inside covers, and pages 4, 6, and 8, courtesy of DoD’s DefenseImagery.mil. CSTS photographs on pages 20–21 by Brian W. Flynn.





Director's Letter

FOR NEARLY A QUARTER OF A CENTURY, the Center for the Study of Traumatic Stress (CSTS) has been on the forefront of translational research on the psychological effects and health consequences of exposure to traumatic events, especially those related to war, disasters, terrorism and public health threats. The Center, part of the Department of Psychiatry in the School of Medicine of the Uniformed Services University, has been uniquely attuned and responsive to our nation's trauma history encompassing events of national and international impact such as 9/11, the anthrax attacks, major hurricanes and H1N1. As a component center of the Defense

Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE), the Center brings scholarly and research oriented problem solving to the mental and behavioral health problems of the Department of Defense and the nation.

In 2010, the Center continued to focus its activities on the effects of the ongoing war in Iraq and Afghanistan, which have led to high rates of posttraumatic stress, posttraumatic stress disorder (PTSD), depression, suicide, co-morbid concussions, traumatic brain injuries (TBIs), and other combat-related mental and behavioral health needs affecting service members, their families and loved ones.

The Center's advances in neuroscience are aimed at improving the psychological health, resilience and post deployment function of service members through identification of biomarkers and other genetic components involved in PTSD and suicide, as well as discovery of novel pharmacologic interventions to prevent and eradicate PTSD symptoms. The Center works on social and epidemiologic studies to identify modifiable risk and resilience factors of service members and their families. Our work is also focused on improving the psychological health and resilience of military families and children. Through research, education and consultation, we are addressing new areas of need such as the care and communication around special risk groups such as body handlers, training for supervisors in fostering resilience, addressing risks for suicidal behaviors and other health risk behaviors, and better understanding the impact of combat injury and parental loss on military children.

Our Center's work is characterized by a sustained focus on collaboration from basic to clinical sciences, from laboratory to field research, from direct clinical care to population level prevention. We assist the Department of Defense in leading the nation in trauma focused care and rapidly moving findings from bench to bedside and from war to disaster. In 2010, two Center scientists deployed to Iraq and Afghanistan bringing the Center's expertise in military and disaster psychiatry to care for those in harm's way. Upon their return, these real world experiences further enrich our ongoing trauma research and outreach. This year our Center has also responded in real time to large-scale disasters such as the Haiti earthquake and the Gulf Oil Spill, and we have been training military and federal responders in the principles of Psychological First Aid.



In addition, CSTS scientists and clinicians have been busy disseminating knowledge through presentations at national and international scientific conferences, through participation in professional and academic review boards and by chairing committees that influence the policy and practice of trauma and disaster care. As part of the Forum on National Security and Health, we brought together national and international thought leaders for The Forum’s first conference, *Stigma and Barriers to Care: Caring for Those Exposed to War, Disaster and Terrorism*. Our Center also sponsored its prestigious, 5th Annual Conference on Amygdala, Stress and Posttraumatic Stress Disorder (PTSD), *Fear in the Human Mind*.

The Center has expanded rapidly and successfully to meet new challenges. At the end of 2010, the Center’s support and professional staff numbered over 75 people representing experienced researchers, scientists and administrators, enabling us to continue to grow and contribute as a world class research facility.

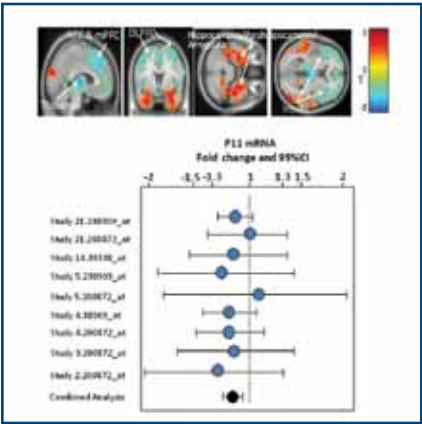
In addition, CSTS scientists continue to be highly productive in publishing important papers, book chapters and books on subjects ranging from the impact of the sniper attacks on the homeless population in Washington, D.C. to knowledge gained from a collection of interviews with world renowned scholars and practitioners on family violence research, assessment and interventions. CSTS scientists and their work have won recognition this year in the form of our membership on major national advisory groups on disaster and mental health care, partnering with an Emmy award winning presentation, being voted, for the second consecutive year, “Best Doctor of the Year” for several of our Scientists and receiving a “Presidential Commendation” from the Association for Academic Psychiatry.

All of these activities and contributions are described on the following pages, which we hope provides a sense of the Center’s scope and mission: integrating basic science and clinical science to better understand the effects of stress and trauma. Our research projects are combining psychosocial, epidemiologic and neuroscience methodologies that will lead to a better understanding of the vulnerability, protective factors and treatments

for trauma disorders. This approach, from laboratory to bedside to bench, will drive both short-term and long-term objectives for all of our Center projects related to research, education, consultation, and training.

We wish to thank the many individuals, organizations and colleagues who have worked with us this year to support and advance trauma knowledge and trauma informed care.

Robert J. Ursano, M.D.
Professor of Psychiatry and Neuroscience
Chair, Dept. of Psychiatry, USU
Director, Center for the Study of Traumatic Stress



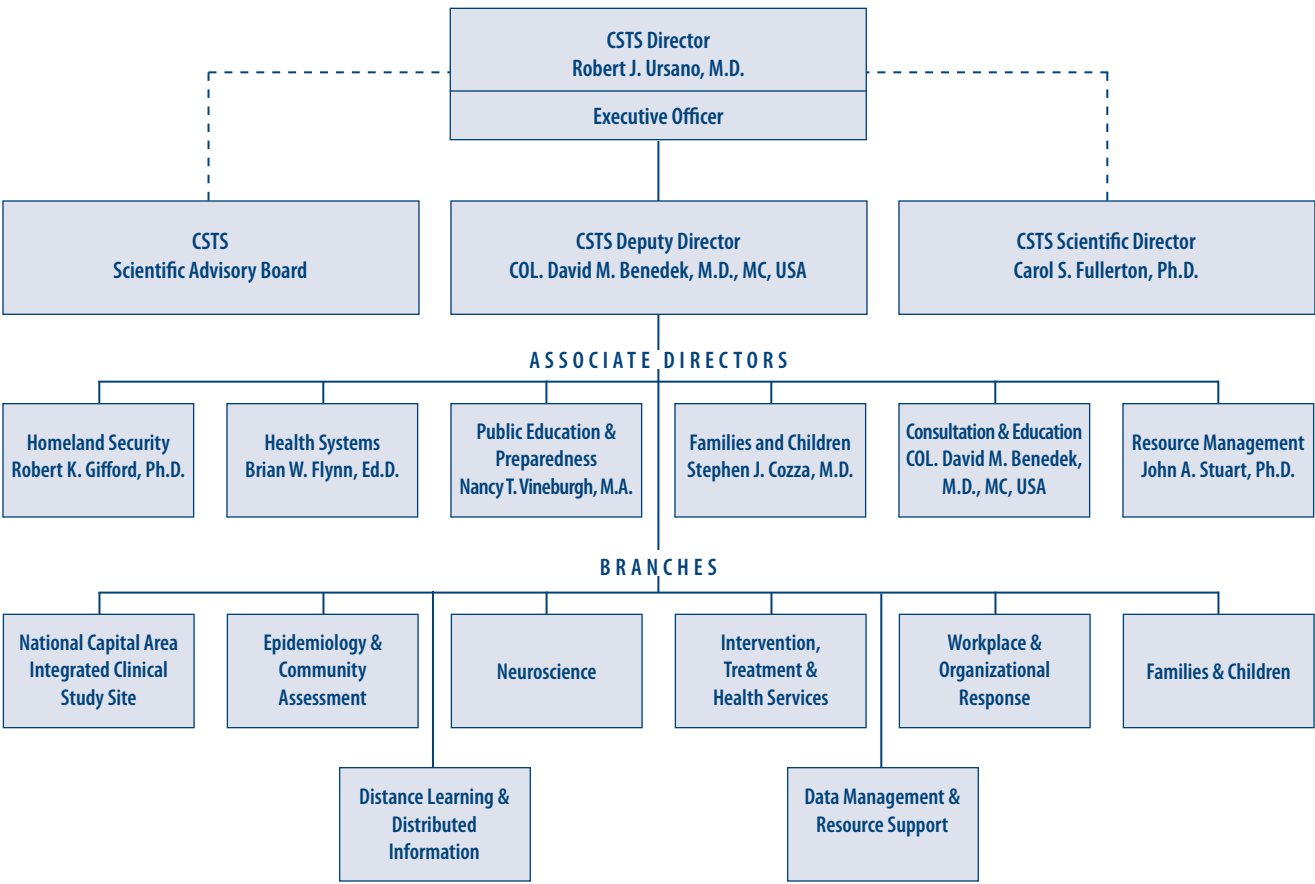
History

The Center for the Study of Traumatic Stress (CSTS) was established in 1987 to address U. S. Department of Defense concerns around the psychological impact and health consequences resulting from the traumatic impact of: 1) the possibility, or actual use, of weapons of mass destruction (WMD) during combat, acts of terrorism or hostage events; 2) combat, peacemaking, peacekeeping, and operations other than war; 3) natural disasters such as hurricanes, tornadoes, or floods; and, 4) more common stress producing events such as physical assaults and motor vehicle, shipboard, or airplane accidents in both the uniformed and civilian communities.

The Center:

■ *Develops and carries out research* programs to extend our knowledge of the medical and psychiatric consequences of war, deployment, trauma, disaster and terrorism, including weapons of mass destruction.

- *Educates and trains* health care providers, leaders, individuals and public and private agencies on how to prevent, mitigate and respond to the negative consequences of war, deployment, traumatic events, disasters, and terrorism.
- *Consults with private and government agencies* on medical care of trauma victims, their families and communities, and their recovery following traumatic events, disasters and terrorism.
- *Maintains an archive of medical literature* on the health consequences of traumatic events, disasters and terrorism for individuals, families, organizations, and communities.
- *Provides opportunities for post-doctoral training* of medical scientists to respond to and research the health consequences of trauma, disaster, and terrorism.





The Center for the Study of Traumatic Stress (CSTS) conducts pioneering research in neuroscience and the neurobiology of stress to inform prevention, treatment and resiliency-based interventions for trauma-induced disorders, especially posttraumatic stress disorder (PTSD) and the risk and protective factors of suicide.

Improving the Psychological Health

The Center for the Study of Traumatic Stress (CSTS) conducts pioneering research in neuroscience and the neurobiology of stress to inform prevention, treatment and resiliency-based interventions for trauma-induced disorders, especially posttraumatic stress disorder (PTSD) and the risk and protective factors of suicide. Center scientists work as a team and in collaboration with neuroscientists from leading academic and research institutions including the National Institutes of Health/National Institute of Mental Health, Harvard University, Columbia University, Yale University and the University of Michigan. Driven by a need and commitment to find solutions to optimize military performance and to enhance and treat military health risks such as PTSD and suicide, the work of the Center and its colleagues has implications for all individuals affected by traumatic events and for the public health of our nation.

The Center's neuroscience research has resulted in the discovery of potential biomarkers for PTSD, potential biomarkers for suicide risk, increased understanding of gene expression patterns that underlie biomarkers, and the role of fear memory consolidation and extinction. These studies seek to identify and inform new treatments that have the potential to not just alleviate symptoms of trauma-induced disorders, but to prevent and treat those whose symptoms have been resistant to current interventions. In 2010, CSTS scientists worked on the following research projects:

Biomarkers for PTSD and Suicide Risk

Biomarkers are increasingly used to diagnose diseases promptly and accurately, to identify individuals at high risk for certain diseases and to follow the course of response to treatment. In the absence of clinical biomarkers for PTSD, diagnosis has been dependent on only the assessment of clinical symptoms. These symptoms are often missed, misdiagnosed, and/or left untreated in thousands of affected individuals (military and civilian), thus disrupting the quality of their lives and the lives of their families and children. Center scientists identified a potential biomarker for PTSD, a protein and its associated gene known as p11. This finding has significant implications for PTSD diagnosis and treatment since its expression

and Resilience of Service Members

pattern was identified not only in animal models but in human PTSD brain tissue.

In 2010, the Center expanded its neuroscience research to address biomarkers for suicide risk. While all major mental disorders carry an increased risk of suicide, it has been found that there is a significant correlation between PTSD and suicide risk. Individuals with PTSD are 15 times more likely to attempt suicide. This has great importance given the prevalence of both mental health issues in our military population, especially those who have or are deployed to Iraq and Afghanistan.

Using blood samples from suicide attempters and non-attempters, and post-mortem brain tissue from patients who had committed suicide and non-suicide controls, Center scientists examined levels of peripheral blood mononuclear cell (PBMC) p11 mRNA to determine how these levels might help differentiate between those individuals who would attempt or complete suicide versus those who would not. The results demonstrated for the first time that PBMC p11 mRNA level is a potential adjunctive biomarker for the assessment of suicide risk in mental disorders.

Novel Approaches for PTSD Treatment

Center neuroscientists are working on developing new, pharmacologic interventions aimed at preventing or treating stress-induced affective disorders such as PTSD. Most research performed thus far has focused on the effectiveness of a few classes of compounds in alleviating symptoms instead of preventing or treating the origin or the chain of events leading to the disease. Center research in 2010, using a PTSD rat model, has addressed an urgent need to seek a novel 5-HT2A receptor antagonist that can demonstrate maximum efficacy with minimum adverse reaction in the treatment of PTSD. In the Center's current research, administration of the novel 5-HT2A antagonist, MDL 11,939, administered within 30 minutes before or after exposure to traumatic stress, is hypothesized to prevent traumatic event-induced exaggerated fear response in an animal model of PTSD. The use of such compounds that act specifically at the 5-HT2A receptor would also be expected to prevent

the undesirable side effects that occur in human subjects who are treated with SSRIs and antidepressants. This research will benefit active duty military, reservists and veterans, as well as civilians exposed to traumatic circumstances.

Center scientists are in the formative stages of a new study using an innovative electronic, hand-held device and methodology, Ecological Momentary Assessment (EMA). EMA is used to examine symptoms of PTSD and depression "in real time" in service members undergoing rehabilitation. The study, *Ecological Momentary Assessment of Posttraumatic Stress Symptoms in Service Members Undergoing Rehabilitation*, will provide a new perspective on identifying PTSD symptom patterns and environmental influences that may foster more effective treatments.

Fear Memory and Fear Memory Forgetting to Enhance PTSD Interventions

Two current Center studies using PTSD rat models are addressing brain processes that are likely to play a role in developing and sustaining PTSD symptoms. The inability to forget traumatic memories is a key characteristic of PTSD. This failure in forgetting often produces vivid and painful flashbacks years after the trauma experience. Emerging evidence suggests that administering corticosterone at the proper time and dosage can promote the memory forgetting process in animals and in healthy humans. This finding has implications for PTSD interventions that will prevent or mitigate the onset of PTSD. The *Genetic Biomarkers for Attenuation of Fear Memory* study has found that administering corticosterone before exposure to stress can attenuate delayed and enhanced fear response in an animal model of PTSD. This research project, which seeks to provide a detailed cellular and molecular mechanism associated with energy biomarkers for the resilience of traumatic stress, will help in the development of a better therapeutic strategy for enhancing resilience in patients suffering from PTSD.

The Center is also looking at gene expression patterns present in brain tissue and in white blood cells that may contribute to the origin and neuropsychiatric phenotypes of PTSD. Using a PTSD rat model, and

developing a rat mitochondria-focused gene chip, scientists will subject rats to the stress protocol developed by He Li, M.D., Ph.D. to look for specific gene expression patterns. The novel diagnostic biomarkers and pharmacologic interventions described above have the potential for broad use both in military populations (active duty, reservists and veterans) and in civilian populations exposed to traumatic events such as natural disasters, vehicle crashes, etc.

The Army has also devoted unprecedented resources (including a recent \$50 million grant) to studying suicide in the hopes of better understanding the phenomenon and preventing future tragedy. The 5-year study funded by the National Institute of Mental Health, U.S. Army STARRS (Studies to Assess Risk and Resilience in Service Members), is the largest study ever to address suicide in the Army and perhaps suicide as a national health problem in the general population. The study is a “Framingham” type study, meant to identify risk and resilience factors—psychological, interpersonal, community, and neurobiological—for suicidal behaviors and also for PTSD, depression, and substance abuse.

In 2010, CSTS staff finalized study designs, developed research instruments, and completed pilot testing for the two largest components of Army STARRS: the All Army Study and the New Soldier Study. Preparations were made and approvals were obtained for the production phases of these two components, which will begin in Jan/Feb of 2011. In 2010, the data analyses for the Historical Data Study began, and the two components of the Soldier Health Outcomes Study were finalized and are scheduled to begin in 2011. Planning and approvals for the OCONUS in-theater portion of the All Army Study are progressing with a planned start date in 2011. In addition, the project entered into a new subaward with University of California, San Diego in 2010 to enhance the planning and design of this complex and multi-faceted project.

PTSD and Post Deployment Function

Studies suggest that between 10% and 20% of combat veterans serving in Iraq and Afghanistan develop PTSD. There is increasing evidence that there is a relationship between PTSD and other adverse psychosocial outcomes of war including substance abuse, aggression, and suicide. Persistent PTSD symptoms,

mild traumatic brain injury (mTBI) and health risk behaviors can disrupt social, occupational, or interpersonal function.

The Center is engaged in some major research projects that address the neurobiology of trauma with implications for PTSD and related brain injury prevention and treatment.



Therapeutic Interventions

The *National Capital Area Integrated Clinical Study Site* (NCAICSS), which comprises an established network of clinician-researchers at WRAMC, NNMC, the D.C. Veterans Administration Hospital, and the Armed Forces Retirement Home, has initiated clinical trials for novel medications and psychotherapy treatment for PTSD and other combat-related disorders (including mTBI). NCAICSS, one of the ten sites of the Congressionally Directed Medical Research Program’s Clinical Consortium for Psychological Health and TBI directed by Dr. Murray Stein at the University of California San Diego, is currently engaged in four studies.

In 2010, enrollment began for the *Acceptance and Commitment Therapy Study*. The aim of this mindfulness-based therapeutic intervention is to help soldiers cope with post-deployment distress and disorders such as depression, mTBI, and PTSD despite the symptoms they may be experiencing. A second study to be conducted in collaboration with the Washing-



ton, D.C. Veterans Administration will examine the effectiveness of *Ganaxolone*, a synthetic neurosteroid for PTSD. Both studies required an extensive approval process involving the Consortium’s External Scientific Advisory Board and individual Institutional Review Board (IRB) approval at each participating site.

A third project nearing IRB approval involves collaboration with the Medical University of South Carolina to conduct *A Pilot Safety and Feasibility Study of High Dose Left Prefrontal Transcranial Magnetic Stimulation* (TMS) for the rapid stabilization of acute suicidal behavior. TMS, an FDA-approved therapy for treatment of depression, involves the application of a strong, pulsing magnetic field to an individual’s head, thus reaching his or her cerebral cortex. This study will examine the effectiveness of TMS for treatment of PTSD and suicidal behaviors.

The fourth study is a 5-year, 2 million dollar neuro-imaging, cognitive testing, and electrophysiological profiling study of service members with mild traumatic brain injury.

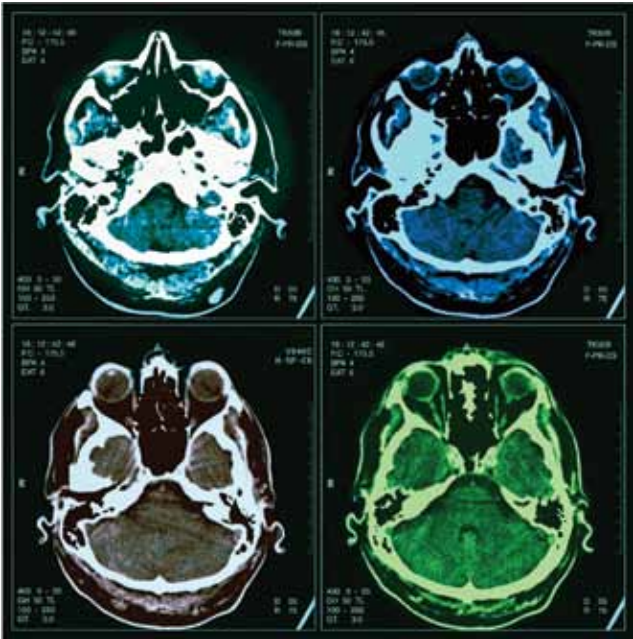
Psychosocial Measures and Neuroscience

An exciting study building upon the Center’s finding of p11 as a genetic marker for PTSD in rats is its *Stress & Biomarkers in a Military Population Study*, which is seeking to replicate p11 findings from the animal studies, as well as explore other potential biomarkers identified in other (non-CSTS) studies. In 2010, Center scientists made three trips to Ft. Bragg, to administer an 18-page questionnaire addressing PTSD, alcohol and substance use, depression, and other co-morbidity to the soldiers in the Special Operations Command who have experienced the challenges of various combat exposures including close contact with enemy fire, IED blasts, and multiple deploy-

ments. Simultaneous sampling of blood and saliva has been conducted in an effort to identify genetic markers for those who meet the criteria/diagnosis of these disorders. The study has expanded to include surveying and biospecimen collection from the members of the 82nd Airborne Division.

In 2010, the Veterans Administration’s Central Office of Research and Development recognized the importance of not only a PTSD biorepository, but also a larger national biorepository for all neuropsychiatric illnesses. The Center’s involvement in this *VA-DoD PTSD CNS Tissue Repository* initiative continues through planning meetings with experts from the VA in specimen collection and storage and in bioinformatics as part of developing plans for collection of data and specimens at the local level with an emphasis on PTSD and commonly co-morbid conditions.

The Center, in collaboration with Dr. Sandro Galea of the University of Michigan, is engaged in a nationwide research project on the health and mental health of *National Guard and Reserve* service members, an at risk population that has been understudied. The study addresses the epidemiology and the trajectory of posttraumatic stress, deployment stress, health risk behaviors and health care utilization in National Guard and Reserve. 2010 saw the completion of the first wave of data collection and preparation of the survey for the second wave of the study.





Repeated deployments, single parenting and the distress of separation can affect marital and parent/child relationships, which may contribute to the increased rates of military child maltreatment and neglect recently reported in the scientific literature.

Improving the Psychological Health

Military children and families face many challenges related to the extended and multiple deployments of service member parents. Repeated deployments, single parenting and the distress of separation can affect marital and parent/child relationships, which may contribute to the increased rates of military child maltreatment and neglect recently reported in the scientific literature. In addition to separations, anxiety about the health and wellbeing of deployed service members and the challenges of reunifications, military families may also be faced with service member injury, illness (e.g. PTSD and other combat stress disorders) or death.

In 2010, the CSTS Child and Family Program (CFP) research portfolio expanded to include more than seven million dollars in funding. The following research initiatives address the impact of deployment and war injuries on military families and children, military child maltreatment, and evaluation of the impact of parental death on children in the military and in the general population.

The Impact of Combat Injury

CFP is engaged in three research projects that address the effects of and interventions for families and children of wounded service members.

Addressing the Needs of Children and Families of the Combat Injured

This 4-year study with primary sites at Walter Reed Army Medical Center (WRAMC) and San Antonio Military Medical Center (SAMMC) is designed to longitudinally investigate the impact of combat injury on military families along 5 major dimensions of parent and family functioning: 1) child and parent distress; 2) parent/child/family functioning; 3) parent-child/family communication; 4) alterations to family schedule and structure; and, 5) long term impact of injury on child, parent and family interaction. The study will follow families through three points over the course of one year to gain insight into the long term recovery process of the combat injured.

FOCUS-CI: A Preventive Intervention with Children and Families of the Combat Injured

This study evaluates a newly refined intervention for severely combat injured service members and their

and Resilience of Military Families and Children

families using two existing approaches: “Families Overcoming and Coping Under Stress” (FOCUS) is a



FOCUS: Combat Injured

resiliency-building intervention for military families experiencing the challenges of multiple deployments and parental, combat-related psychological and physical problems; “Early Combined Collaborative

Care” (ECCC) addresses the long-term, changing needs of traumatically injured patients transitioning from hospital to home. The new intervention (FOCUS-Combat Injured CI) will be administered at WRAMC, SAMMC, and Madigan Army Medical Center (MAMC). Participating families will be followed for two years to learn about the long-term recovery trajectory.

Child and Family Trauma Program: A Study of Combat Injured Families

This study examines the impact of severe combat injury on military families through interviews conducted at Operation Purple Healing Adventures (OPHA), an annual summer camp program for combat injured service members and their families sponsored by The National Military Family Association (NMFA). Forty families were assessed in summers 2009 and 2010. Qualitative data is being collected from focus groups to assess the issues related to combat injury and family functioning. Among the issues to be studied is how combat injury effects family life.

The Impact of Child Neglect, Maltreatment and Parental Loss

Deployment Family Stress: Child Neglect and Maltreatment in US Army Families

The goal of this in-depth study of child maltreatment and neglect among Army personnel is to describe the characteristics of substantiated child neglect cases and to identify factors within the family, the military community and the civilian community that contribute to family health or child maltreatment. This 4-year study employs three cross-informing methodologies: 1) a clinical record review of approximately 400 child neglect cases at 4 military bases around the country; 2) surveys administered to selected stakeholders in-

involved in child services at 26 military bases; and, 3) an epidemiological examination of selected installation and civilian community characteristics and resources to help identify risk and protective factors of child maltreatment.

Understanding and Meeting the Needs of Children Following Family Member Death

This study, funded by Sesame Workshop, is the CFP’s preliminary research initiative into the area of family bereavement. It addresses the impact of parental death on children and their caretakers in both military and civilian populations by evaluating the helpfulness of a Sesame Workshop DVD and supplemental materials designed for grieving families. The study collects data on the health and wellbeing of surviving children (ages 2–18) who have lost a parent since September 11, 2001 as observed by their current caretaker. The purpose is to better understand diverse experiences and needs in bereavement. The study also evaluates the usefulness of the Sesame materials for the survivors and their grieving process. Data have been collected throughout 2010. Initial results of the project were provided to Sesame Workshop in January 2011. This study has provided a springboard for further CFP bereavement related research.



The Center’s CFP also provides a wide range of consultation to and development of educational resources for professionals in healthcare, child trauma, and to academic, scientific and government leaders. CFP collaborates with National Child Traumatic Stress Network (NCTSN), Zero to Three, Military Child Education Coalition (MCEC) and National Military Family Association (NMFA) to improve knowledge and care for military families and children. In 2010, CFP also provided its expertise in military injury and family care to the National Intrepid Center of Excellence (NICoE) and at an impressive number of scientific and professional conferences. Highlights of the CFP educational activities are featured on pages 14–15.



Disaster mental health examines the impact and implications of individual, community and organizational responses to traumatic events from natural disasters such as hurricanes, earthquakes and the tsunami, to human made disasters such as the Gulf Oil Spill and terrorist events such as the Washington D.C. sniper attacks.

Improving the Psychological Health Traumatic Events and Disasters

Since its establishment in 1987, the Center has helped shape the landscape of disaster mental health. Disaster mental health examines the impact and implications of individual, community and organizational responses to traumatic events from natural disasters such as hurricanes, earthquakes and tsunami, to human made disasters such as the Gulf Oil Spill and terrorist events such as the Washington D.C. sniper attacks. Through research, education and consultation, the Center has been involved in nearly every major disaster our nation has faced in the past 25 years.

The Center is currently engaged in several important projects described below that address the psychological health and resilience of first responders and the role of “collective efficacy” in communities (i.e., conditions/resources within a group that lead to a shared vision and the capacity to produce effects for its members) in disaster response and recovery.

Psychological and Behavioral Responses in Public Health Workers: A Study of the Florida Department of Health to Multiple Hurricanes

Partnering with Centers for Disease Control and Prevention (CDC), the National Institute of Occupational Safety and Health, the University of Miami and the Florida Department of Health, Center scientists have been collecting data as part of a multilevel, longitudinal study to understand the impact of the 2004 and 2005 Hurricanes on our nation’s first responders including Florida Department of Health personnel who assumed this role.

In 2010 Center scientists examined community level data and found that communities with lower rates of PTSD and PTSD symptoms were associated with higher rates of collective community efficacy. The implications of these findings, submitted in a qualitative paper, will help target more effective post disaster interventions and public health disaster care.

Disaster Mental Health Interventions for First Responders

The Center has been applying evidence-informed approaches to trauma and disaster response. Center scientists are engaged in two important projects based on the principles of Psychological First Aid (PFA), as

and Resilience of Individuals and Communities Exposed to

well as educational resources developed by the Center to benefit military and civilian populations at risk and workplace preparedness.

Intervention with Soldiers Returning from Deployment and Spouses: TEAM

Troop Education for Army Morale (TEAM) is a Psychological First Aid based intervention designed to help U.S. Army Mortuary Affairs Soldiers and spouses cope with the complex challenges of deployment and exposure to body handling and recovery in the combat theater. Completing its second year of workshops, TEAM uses natural support systems such as spouses and buddy care based on the principles of Psychological First Aid. 2010 preliminary findings indicate that the TEAM intervention is effective in addressing posttraumatic stress as well as other adjustment issues following deployment.

Centers for Disease Control and Prevention: Disaster Preparedness in the Workplace and First Responders

In 2008, the Centers for Disease Control and Prevention (CDC) collaborated with CSTS to conduct an organizational assessment of its disaster preparedness, deployment operations, policy and practices in an effort to identify factors to sustain resilience in CDC emergency responders. The following year, the Center developed and began implementation of a first-responder resiliency officer training program incorporating the principles of Psychological First Aid to strengthen the outreach and resilience of its Deployment Safety and Resiliency Team officers who travel worldwide to address public health threats and major disasters. In 2010, the Center conducted its 3rd training at CDC. As further training sessions are conducted evaluation of effectiveness will continue and outcome reports will be generated.

Disaster Mental Health Consultation at the State and National Level

Center scientists serve on academic, scientific, community, workplace and government advisory boards to advance disaster and behavioral health knowledge

and principles. This involvement helps community, workplace and government and public health leadership in disaster planning and response at the local, regional and national level. Highlights of 2010 include the following participation:

The Mental Health Subcommittee of the National Biodefense Science Board (NBSB)

NBSB released two important documents: first, a set of recommendations regarding Federal priorities around disaster mental health; and second, to assess the state of integration of Federal disaster behavioral health efforts across the Federal government. Center scientists participated in analyses of results and development of the final report to the NBSB that was accepted in September 2010. The combined documents provide an important blueprint for what the Federal government needs to do to move the field of disaster behavioral health forward as well as recommendations for better integration of Federal efforts in this arena.

The National Association of State Mental Health Program Directors (NASMHPD)

The Center assisted in the development and publication of the handbook, “Responding to a High-Profile Tragic Incident Involving a Person with a Serious Mental Illness: A Toolkit for State Mental Health Commissioners.” This handbook is a practical guide for Commissioners and leaders dealing with acts of violence perpetrated by people with suspected or actual mental illness.

The President’s National Commission on the BP Deepwater Horizon Oil Spill and Offshore Drilling

The Center provided consultation to the Commission on disaster behavioral health issues that will be incorporated into its final report. The consultation, which will continue throughout 2011, will identify important topics and documents that support the significance and implications of disaster behavioral health as integral to planning for and responding to events.

2010 Timeline of CSTS Presentations, Briefings, Consultations, Trainings and Board Participation

In 2010, CSTS scientists disseminated knowledge on the Center’s trauma research and expertise through briefings, presentations, training, consultation, and participation on medical and scientific boards. Here are some highlights of 2010’s monthly activities:



JANUARY 2010

Briefed the Senior Military Medical Advisory Council and DoD Senior Officers Council on Army STARRS (Army Study to Assess Risk and Resilience in Service members)

Chaired the Science Board of the Centers for Disease Control (CDC) Office of Public Health Preparedness and Response review of its Emergency Operations Center

Spoke to students at the University of Maryland Winter Symposium on addressing behavioral health needs of student veterans

Presented the second round of the Deployment Safety and Resiliency Team training to CDC



FEBRUARY 2010

Pre-briefed Army on Army STARRS prior to March briefing the Army Vice Chief of Staff (VCSA)

Presented “Families Over Coming Under Stress - Combat Injured (FOCUS-CI): A Program for Supporting the Combat Injured and their Families” as part of a panel to inform the Defense Centers of Excellence (DCoE) about the proposed family program for recovering service members and their families at the National Intrepid Centers of Excellence (NICoE)

MARCH 2010

Briefed the Secretary of the Army, VCSA, and the Army Surgeon General on STARRS

Chaired a breakfast symposium entitled “Understanding the Needs of Very Young Military Children” at the International Society of Infant Stress

Presented “Impact of military mission and deployment on Service members” for the National Child Traumatic Stress Network’s “Essentials for those who care for military children” master speaker series

Sponsored “Stigma and Barriers To Care,” the first meeting of the Forum on Health and National Security

Presented “Stigma and Barriers to Care in Terrorism and Public Health Emergencies: System Issues” at the Stigma and Barriers to Care meeting

APRIL 2010

Served as a military behavioral health panelist at Interagency Institute for Executive Medicine, Canadian Embassy

Presented “The Impact of Combat Injury on Military Families and Children: Research Developments,” to the Military Family Research Institute at Purdue University

Presented “Psychological Responses to Traumatic Exposures” and “Public Health Issues for Planners and Policy Makers” to graduate students in political science and international studies at George Washington University

Presented “Re-Engineering Systems of Primary Care Treatment in the Military (RESPECT-MIL)” to post-doctoral psychologists at the Baltimore Veterans Affairs (VA), University of Maryland

Presented a poster entitled, “Traumatic Stress and Increased Tobacco Use in 9/11 Disaster Workers” at the American Society of Addiction Medicine (ASAM) 41st Annual Medical Scientific Conference

Hosted “Theater of War”, a presentation of readings of Sophocles’ plays, Ajax and Philoctetes, to military communities across the United States

Served on the Scientific Advisory Board and participated in the Pentagon launch of Sesame Workshop’s Talk, Listen, and Connect (TLC)-III “When Families Grieve”

Hosted the 5th Annual Conference on Amygdala, Stress and Posttraumatic Stress Disorder (PTSD) entitled, “Fear in the Human Mind”

MAY 2010

Participated in a three day meeting as a member of the Diagnostic and Statistical Manual of Mental Disorders-V (DSM-V) Posttraumatic Stress Disorder (PTSD) task force

Chaired the Disaster Psychiatry Committee of the American Psychiatric Association (APA) meeting in New Orleans

Presented “PTSD: War to Disaster and Bench to Bedside to Public Health” at the APA meeting

Presented “Integrating Psychosocial Factors in Effective Crisis Communications for Biological Incidents” at the BioDefense 2010 Conference in Washington, D.C.

Presented “Psychological first aid: Helping victims in the immediate aftermath of disaster and beyond” to nurse practitioners at Walter Reed Army Medical Center

Presented a poster entitled, “Early educational intervention for Mortuary Affairs soldiers post deployment: Preliminary results” at the Uniformed Services University of the Health Sciences (USUHS) Research Week

Presented “Children and Families of Combat Veterans” for the American Academy of Child and Adolescent Psychiatry Advocacy Day at the US Congress

Presented “PTSD: War to Disaster and Bench to Bedside to Public Health” at the American Psychiatric Association meeting

Presented “The Children and Families of Combat Injured Service Members” at the Navy and Marine Corps Combat and Operational Stress Conference: Taking Action, Measuring Results

JUNE 2010

Presented a talk, “Military children and families: They also serve” to the National Child Care Advisory Group and the National Association of Child Care Resources & Referral Agencies

Briefed the Secretary of the Army and VCSA Chief of Staff of the Army on progress of the Army STARRS

Served as reviewer for Institute of Medicine, National Academy of Sciences, draft report “assessing the effects of the Gulf Of Mexico Oil Spill on Human Health

Briefed the Uniformed Services University (USU) Board of Regents on Army STARRS

JULY 2010

Presented a poster entitled, “Deployment family stress: Child neglect and maltreatment in US Army families” at the 18th annual colloquium of the American Professional Society on the Abuse of Children

AUGUST 2010

Delivered a presentation entitled “Interest in Receiving Mental Health Services after Combat Deployment to Iraq: Overcoming Stigma and Barriers to Care” at the Force Health Protection Conference

SEPTEMBER 2010

Met with the United States Army Surgeon General and a representative of the Sergeant Major of the Army in reference to STARRS

Delivered Deployment Safety and Resiliency Team first responder training to CDC first responders, met with CDC Occupational Health regarding first responder training outcomes research

Conducted the third of four workshops for cohort 3, and conducted the final survey with cohort 1 as part of the Troop Education for Army Morale (TEAM)

Attended a Working Group Meeting in response to the National Defense Authorization Act (NDAA) 2010, Section 722, “Study, Plan, and Pilot for the Mental Health Care Needs of Dependent Children on Members of the Armed Forces”

OCTOBER 2010

Served on Advisory Board for the Disaster Mental Health Subcommittee of the National Biodefense Science Board report, “Integration of Mental and Behavioral Health in Federal Disaster Preparedness, Response, and Recovery: Assessment and Recommendations”

Provided telephone consultation to staff of the National Commission on the BP Deepwater Horizon Oil Spill & Offshore Drilling around behavioral health impact

Chaired a symposium on the Gulf Oil Spill Disaster at the American Psychiatric Association (APA) Psychiatric Institute in Boston



NOVEMBER 2010

Presented “The Cost of War” at King’s College, University of London Symposium, National Press Club in Washington, D.C.

Presented “Epidemiology and Challenges” at the Defense Science Review Committee/ DARPA (Defense Advanced Research Projects Agency) meeting on suicide in the military

Presented “Behavioral Health Surveillance in Disasters, Terrorism and Public Health Emergencies” at CDC

Presented “TEAM: An early intervention for Mortuary Affairs soldiers post deployment; Preliminary results from the first three cohorts” at the 26th annual meeting of the International Society for Traumatic Stress Studies

Presented “Differences in PTSD’s factor structure based on different PTSD assessment instrumentation” at the 26th annual meeting of ISTSS

Presented “Young Children in US Military Families: How Are They Doing and What Are We Doing About it?” at the 26th annual meeting of ISTSS

Presented “PTSD from Bench to Bedside” at the Society for Neuroscience Public Advocacy Forum

Presented “A distinct pattern of amygdala neuronal activation dissociates auditory and contextual fear memory” at the Society for Neuroscience Public Advocacy Forum

DECEMBER 2010

Presented “Psychological Health Effects of Deployment on Significant Others of Soldiers and Veterans” at the 3rd Annual Trauma Spectrum Conference

Conducted orientation for cohort 4 as part of the Troop Education for Army Morale (TEAM) project at Ft. Lee, Virginia

Provided expert guidance at a meeting of the Defense Health Board (DHB) Medical Ethics Subcommittee

Participated in the DHB Subcommittee meeting on care provider training for delivery of psychopharmacologic and complimentary/alternative treatments for behavioral health issues in the combat theater

Presented “Psychological Health Effects of Deployment on Significant Others of Soldiers and Veterans” at the 3rd Annual Trauma Spectrum Conference

Participated in the National Child Traumatic Stress Network (NCTSN) Webinar Series

Courage to Care Courage to Talk



About War Injuries

- Are you talking about the injury?
- What have you told your children?
- Do you know what questions to ask healthcare providers?

Visit CourageToTalk.org for information, resources and support.

Developed by the Center for the Study of Traumatic Stress (CSTS) in partnership with the Department of Defense, the Department of Health and Human Services, and a partnership of the National Center of Posttraumatic Stress Disorder (NCPTSD) and the Department of Defense.



The Center hosts professional conferences, develops fact sheets, often in real time, in response to national and international disasters, creates innovative health campaigns that address timely trauma needs, and works with cutting edge technologies and organizations to facilitate podcasts and distance learning products, and to communicate via social media outlets.

Improving Psychological Health and

The Center for the Study of Traumatic Stress provides a wide range of educational activities and resources that advance its expertise in disaster and military psychiatry. The Center hosts professional conferences, develops fact sheets, often in real time, in response to national and international disasters, creates innovative health campaigns that address timely trauma needs, and works with cutting edge technologies and organizations to facilitate podcasts and distance learning products, and to communicate via social media outlets.

Here are some educational highlights for 2010.

Conferences

The Center for the Study of Traumatic Stress hosted a conference, *Stigma and Barriers to Care: Caring for Those Exposed to War, Disaster and Terrorism* on March 24th through 26th, 2010. National and international thought leaders discussed and developed a set of recommendations in the areas of education, training, leadership and research that can help overcome the stigma and barriers to care for populations exposed to war, disaster and terrorism. The conference was the first in a planned series that is part of the Forum on Health and National Security.

On April 26, 2010, CSTS hosted the 5th Annual Amygdala, Stress and PTSD Conference, *Fear in the Human Mind*, at Uniformed Services University that focused on two major areas of research: Basic Neuroscience: Role of the Amygdala Neurocircuitry in Fear, Memory and Anxiety and Translational Research: From Neurobiology to Anxiety, Fear, and PTSD.

Developing Learning Communities through National Collaboration

Throughout 2010, the Center partnered with the National Child Traumatic Stress Network (NCTSN) to develop a “Military Families Learning Community” consisting of educational resources and tools to enhance provider knowledge and care of military children and families. These resources included:

Podcasts: “*Essentials for Those Who Care for Military Children and Families*”: Army, Navy, Air Force, and Marine Corps experts discussing the culture of military children and families — the impact of deploy-

Resilience through Educational Outreach and Resources

ment, programs and services for military children and families, how to become a TRICARE provider, Military OneSource resources, and building community capacity to serve military families. Podcasts may be viewed at: <http://learn.nctsn.org/course/category.php?id=10> (select podcasts/“Essentials for Those Who Care for Military Children and Families”).

Master Speaker Series: Army, Navy, Air Force, and Marine Corps experts discussing the strengths and perspectives of service members and their families, the impact of polytrauma and traumatic brain injury, behavior management and a family-centered intervention, called FOCUS. Archived presentations can be viewed at: <http://learn.nctsn.org/course/category.php?id=10> (select Master Speaker Series).

Military Families Knowledge Bank (MFKB): A database that speeds access to abstracts of timely articles and web-based resources related to military families and children at: <http://mfkb.nctsn.org/cwis/index.php>.

Innovative Health Communication Initiatives

Courage to Care Courage to Talk

In March 2010, the Center’s Child and Family Program launched a unique health campaign, *Courage to Care Courage to Talk* (CtT). The campaign’s purpose is to foster communication around the impact of war injuries on military families and children, and to connect families to supportive resources and individuals within the healthcare environment. The CtT resources — posters and brochures in English and Spanish — address topics such as ‘talking to healthcare providers,’ ‘talking to your children about the injury,’ and ‘principles of care’ for families of the combat injured.

A number of prominent military treatment centers participated in the campaign including National Naval Medical Center, Bethesda, Naval Medical Center San Diego, Walter Reed Army Medical Center, Brooke Army Medical Center, Landstuhl Regional Medical Center, and Madigan Army Medical Center. In addition, CtT materials were featured at the Pentagon during *Suicide Prevention Month* in September and on the *Pentagon InfoNet* throughout the fall. Approximately 160, 000 people view the InfoNet during any given week in the Pentagon and at a number of

federal buildings. There is a companion website at www.couragetotalk.org.

Courage to Care

In its 6th year of continuous publication, Courage to Care (CtT) is the leading e-health information



campaign that draws upon Uniformed Services University’s and the Center’s expertise in military medicine and military unique health and mental health issues. In November 2010, the Center developed and disseminated two fact sheets that generated

considerable interest and attention: ‘Asking for Help: Facilitating Important Behaviors for Health and Family Function’ for providers, and ‘Asking for Help: Do You Know How?’ for military families. Defense Media Activity, DoD’s direct line of communication for news and information to U.S. forces worldwide, featured Courage to Care’s ‘Asking for Help’ fact sheets on its service member blog.



A 2010 highlight of the Center’s Family Violence and Trauma Project (FVTP) was the publication of *Family Violence Research, Assessment and Intervention: Looking Back, Looking Ahead*.

This book is a collection of interviews by renowned child and family researchers and practitioners that have appeared in *Joining Forces Joining Families*, a newsletter published by the CSTS. In its fifteenth year, FVTP provides support via briefings, papers, staff studies and its quarterly newsletter to inform Army leadership and the U.S. Army’s Family Advocacy Program of the scientific and medical aspects of child and spouse abuse.



LC DR Patcho
Santiago, M.D.,
M.P.H., MC, USN



Maj Derrick Hamaoka, M.D., USAF, MC, FS

These deployments represent a unique aspect of the Center’s work — from bench to bedside to community.

Recognition

Two Center Scientists Deployed to the War Zone

2010 saw the deployment of two Center scientists who are also Active Duty military psychiatrists. Maj Derrick Hamaoka, M.D., USAF, MC, FS was deployed to Iraq and returned home in May. LCDR Patcho Santiago, M.D., M.P.H., MC, USN deployed to Afghanistan and is scheduled to return early in 2011

These deployments represent a unique aspect of the Center’s work — from bench to bedside to community. According to Santiago, “the Center’s work in research, education and consultation set me up for a very successful deployment as Officer-In-Charge of the Navy’s Mobile Mental Health Care Team. We conducted a public health mission for the Navy in Afghanistan. The three key elements of that mission are behavioral health surveillance of expeditionary Sailors, communicating our findings to leadership, and recommending population-level interventions based on these surveillance findings. This has been an opportunity for me to effectively bring ideas from the ivory tower to the deckplates — the real world experiences of deployed Naval officers engaged in the war on terrorism.”

Hamaoka expresses a similar view. He explains that, “the Center’s training and emphasis on education, research, and consultation were invaluable to me as the Officer-In-Charge of COB Adder, one of the largest combat stress clinics in Iraq. Being a part of the Center kept me up-to-date on the most pressing issues of deployed service members, which lead to the development and implementation of “just-in-time” trainings, surveillance, and consultations. This was essential, as the interventions had to be accepted by commanders and soldiers, as well as support and enhance the mission.”

The Center recognizes these important contributions to our nation and to the military healthcare of those in harm’s way. Welcome home Drs. Hamaoka and Santiago!

Outstanding Achievement

Center Scientists Recognized for Outstanding Achievement

- The Center's Director, **Dr. Robert J. Ursano** was awarded the "Presidential Commendation" from the Association for Academic Psychiatry in "recognition of outstanding contributions to psychiatric education." Dr. Ursano's work was also highlighted as an example of outstanding research in the Congressionally Directed Medical Research Programs promotional information materials for fiscal year 2010.
- Center Senior Scientist, **COL Charles C. Engel, M.D., M.P.H., MC, USA** was elected to the Board of Directors of the International Society for Traumatic Stress Studies.
- Center Associate Director, **COL David M. Benedek, M.D., MC, USA** was appointed as Deputy Editor of the Journal of Nervous and Mental Disease. Dr. Benedek was also elected as the Society of Uniformed Services Psychiatrists, Deputy Assembly Representative to the Assembly of the American Psychiatric Association.
- Center Executive Officer, **Robert K. Gifford, Ph.D. and Edmund G. Howe III, M.D., J.D.**, Director, Programs for Medical Students in Ethics, Uniformed Services University Medical School, were appointed as members of the Headquarters (HQ), United States Army Medical Research and Materiel Command (USAMRMC) Research Ethics Advisory Panel (REAP).
- Center Associate Director, **Stephen J. Cozza, M.D.** was named one of Washington D.C.'s top doctors in *Washingtonian Magazine*. Dr. Cozza also served on the Scientific Advisory Board and participated in the Pentagon launch of Sesame Workshop's Talk, Listen, and Connect (TLC)-III "When Families Grieve," which was nominated for an Emmy in July, 2010.
- **The Center** received a letter of appreciation from Major General Jamie Balfour, Director General of the Winston Churchill Memorial Trust, London, UK, for the Center's support of their fellowship program.

Funded Grants and Awards

- Family Violence and Trauma Project III
- Protecting the Health, Safety & Resilience of Deployed Staff
- Amphetamine Challenge: A Marker of Brain Function that Mediates Risk for Drug Abuse and Alcohol Abuse
- Clinical Study Site for PTSD and TBI (sub-award)
- Addressing the Needs of Children and Families of Combat Injured
- Mortuary Affairs Soldiers: Early Intervention and Altering Barriers to Care for Traumatic Stress and PTSD
- Deployment Family Stress: Child Neglect and Maltreatment in U S Army Families
- Mental Health and Service Utilization Among Reserve and National Guard Forces (sub award)
- PTSD Trajectory, Co-Morbidity, and Utilization of Mental Health Services Among Reserve Forces (sub-award)
- PTSD Trajectory, Co-Morbidity, and Utilization of Mental Health Services Among National Guard Soldiers
- Neurobiologic Evaluation of Novel Targets for Therapeutic Intervention in PTSD
- Identification of Gene Expression Patterns in Brain Tissues and Peripheral White Blood Cells of Rat Model of PTSD
- CSTS — Program Grant 2008
- CSTS — Program Grant 2010
- FOCUS-CI Preventive Intervention with Children and Families of Combat Injured
- Brain Indices of Risk for PTSD after Mild TBI
- Evaluation of Sesame Workshop's "Talk Listen Connect
- Initial Randomized Controlled Trial of Acceptance and Commitment Therapy (ACT) for Distress and Impairment in OEF/OIF Veterans
- A Pilot Safety and Feasibility Study of High Dose Left Prefrontal Transcranial Magnetic Stimulation (TMS)
- Modifiable Risk and Protective Factors for Suicidal Behaviors in the US Army
- Modifiable Risk and Protective Factors for Suicidal Behaviors in the US Army — ARRA
- Differential Dysregulation of Subcortical Plasticity after TBI

2010 Publications

Department of Psychiatry

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CSTS 2010—A Snapshot



The Trauma Team meeting (pictured above) is a Center tradition that takes place every Friday at noon. CSTS scientists and support staff share important projects and their benchmarks, which enhances the Center’s collaborative approach. The Center also invites visiting scientists to learn about the work and scope of Center research, education and consultation.



Center Director, Robert Ursano, M.D. and Center Scientific Director, Carol Fullerton, Ph.D. discuss current research encompassing both military and disaster psychiatry. Drs. Ursano and Fullerton have worked together nearly 25 years since the Center’s establishment.



Dr. Michael Stanley delivers a presentation to CSTS scientists as part of the Disaster and Preventative Psychiatry Fellow Seminar Series. The Center provides the nation’s only fellowship in Disaster Psychiatry and Public Health.



Senior CSTS neuroscientist, Lei Zhang, M.D., is pictured in his laboratory, which is located at the F. Edward Hebert School of Medicine, and is part of the Department of Psychiatry at the Uniformed Services University.



Brian Flynn, Ed.D., CSTS Associate Director, moderates a panel and discussion at the 26th Annual Rosalynn Carter Symposium on Mental Health Policy, “A Veteran’s Journey Home: Reintegrating our National Guard and Reservists into Family, Community and Workplace.”



This website was created to support a study undertaken by the Center’s Child and Family Program on the impact of parental death using a Sesame Workshop DVD and resources designed for grieving families. Participating families used the website to share their unique experiences and provide feedback for this project.



The Center’s Family Violence and Trauma Project publishes a newsletter, Joining Forces Joining Families, that informs Army leadership and its Family Advocacy Program of the scientific and medical aspects of family maltreatment.



The Center’s website, www.cstsonline.org, provides a wide range of resources including fact sheets that advance trauma knowledge and trauma informed care. These resources are developed for health professionals and scientists, first responders, military, government, business and public health leadership, and for civilian and military families and children.



The Center for the Study of Traumatic Stress is located on the 5th floor of Building 6700 A Rockledge in Bethesda, Maryland. The Center’s neuroscience laboratories are primarily within the Uniformed Services University Medical School on the grounds of the National Naval Medical Center.

CSTS Directors, Scientists and Scientific Advisory Board

CSTS DIRECTORS

Robert J. Ursano, M.D.
Director, CSTS
Chairman, Department of Psychiatry
Professor of Psychiatry and Neuroscience
F. Edward Hebert School of Medicine
Uniformed Services University

COL David M. Benedek, M.D. MC, USA
Associate Director, Consultation and Education, CSTS
Professor/Deputy Chair, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Carol S. Fullerton, Ph.D.
Director, Scientific Research, CSTS
Professor, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Brian W. Flynn, Ed.D.
Associate Director, Health Systems, CSTS
Adjunct Professor, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Stephen J. Cozza, M.D.
Associate Director, Child and Family Program, CSTS
Professor, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Robert K. Gifford, Ph.D.
Executive Officer, and
Associate Director, Homeland Security Studies, CSTS
Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Nancy T. Vineburgh, M.A.
Associate Director, Public Education and Preparedness, CSTS
Assistant Professor, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

John A. Stuart, Ph.D.
Director, Resource Management, CSTS
Assistant Professor, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

CSTS SCIENTISTS

COL David M. Benedek, MD, MC, USA
Professor
Consultant to the U.S. Army Surgeon General for Forensic Psychiatry
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Quinn M. Biggs, Ph. D., M.P.H.
Research Psychologist (Post Doc)
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Maria Braga, D.D.S., Ph.D.
Associate Professor
Department of Anatomy, Physiology and Genetics
F. Edward Hebert School of Medicine
Uniformed Services University

Stephen J. Cozza, M.D.
Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Brian Crowley, M.D.
Clinical Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Kwang Choi, Ph.D.
Research Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Connie Duncan, Ph.D.
Research Associate Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Richard S. Epstein, M.D., P.A.
Clinical Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

COL Charles Engel, MC, USA, M.P.H.
Associate Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Margaret Feerick, Ph.D.
Senior Research Psychologist, CSTS
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Brian W. Flynn, Ed.D.
Adjunct Professor, Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Michael C. Freed, Ph.D.
Research Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Carol S. Fullerton, Ph.D.
Research Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Frances Gabbay, Ph.D.
Research Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

COL Gary Gackstetter, USAF
Associate Professor
Department of Preventive Medicine/
Biometrics
F. Edward Hebert School of Medicine
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Robert K. Gifford, Ph.D.
Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Matthew N. Goldenberg, M.D.
Assistant Professor of Psychiatry, CSTS
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Krisitie Gore, Ph.D.
Research Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Jennifer Guimond, Ph.D.
Research Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Maj Derrick Hamaoka, M.D., USAF, MC, FS
Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Harry C. Holloway, M.D.
Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

James E. McCarroll, Ph.D., MPH
Research Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

John A. Stuart, Ph.D.
Research Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University

Lei Zhang, M.D.
Assistant Professor
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University



The Center develops and disseminates educational resources that address the behavioral implications of exposure to natural and human made disasters. The Center often responds in real time to events such as the earthquake in Haiti providing fact sheets to help first responders and disaster leadership on the ground.

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Malverne, NY 11565

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Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University of the Health
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4301 Jones Bridge Road
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Uniformed Services University of the Health
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4301 Jones Bridge Road
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Senior Lecturer
Department of Psychiatry
F. Edward Hebert School of Medicine
Uniformed Services University of the Health
Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799

Robert M. Post, M.D.
Head, Bioplar Collaborative Network
3502 Turner Lane
Chevy Chase, MD 20815

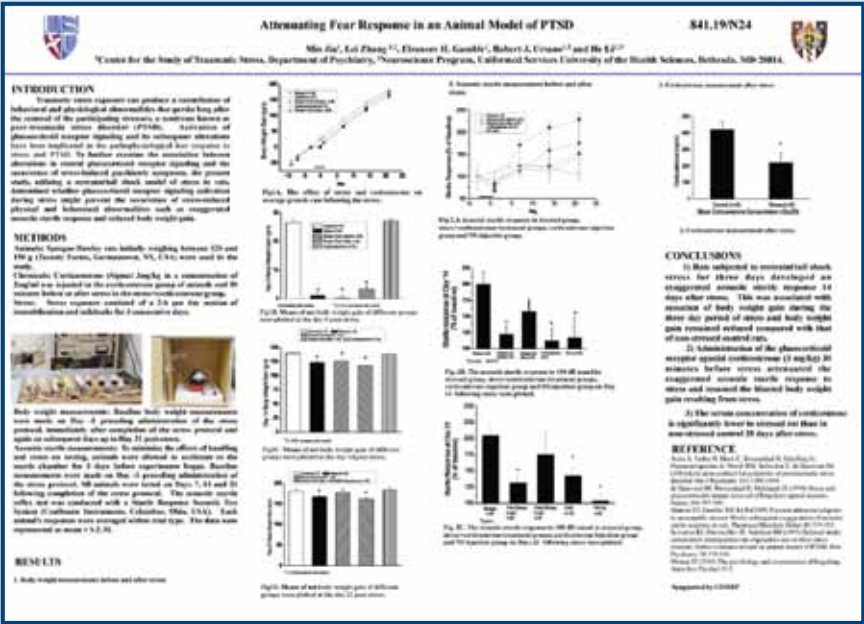
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F. Edward Hebert School of Medicine
Uniformed Services University of the Health
Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799

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Department of Psychiatry
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Jerusalem, Israel

CAPT Trueman Sharp, MC, USN
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Medicine
F. Edward Hebert School of Medicine
Uniformed Services University of the Health
Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799

Robert J. Ursano, M.D.
Chairman, Department of Psychiatry
Professor of Psychiatry and Neuroscience
F. Edward Hebert School of Medicine
Uniformed Services University of the Health
Sciences
4301 Jones Bridge Road
Bethesda, MD 20814-4799

Lars Weisaeth, M.D.
Professor and Chairman
Division of Disaster Psychiatry
University of Oslo
Oslo, Norway



The Center's neuroscience research utilizes a rat model of PTSD to better understand the effects of traumatic stress in the hopes of developing more effective treatments for service members affected by PTSD and other trauma related disorders.

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Center for the Study of Traumatic Stress
 Uniformed Services University of the Health Sciences
 4301 Jones Bridge Road, Bethesda, MD 20814-4799
 Tel: 301-295-2470 | Fax: 301-319-6965
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